

Hemisphere on the Bow - EV Charging Project

Overview

This document brings together the requirements of the ChargeYYC Phase-2 program, the proposed design for Hemisphere on the Bow's EV charging system, cost estimates, and bylaw considerations. It includes clarifications provided by the board. The goal is to present a clear summary in plain language.

1. ChargeYYC Phase-2 program

1.1 Timeline

ChargeYYC Phase-2 opens **19 Aug 2025** and closes **18 Nov 2025** [1, pg. 2]. The City will select a diverse set of buildings and send notices **Jan 2026** [1, pg. 2]. Selected projects must complete installation within **nine months of approval** [1, pg. 3].

1.2 Eligibility and application requirements

Applicants must be legal owners, authorized managers, or condo boards [1, pg. 3]. The application must include an **EV-Charging Road Map** that shows electrical capacity, charger locations, and charger types [1, pg. 3]. Applicants must contact **ENMAX** early to discuss service requirements [1, pg. 3].

1.3 Rebate structure

ChargeYYC has two rebates. Both reimburse **50%** of eligible costs:

1. **EV-Enabled Rebate:** up to **\$6,000 per stall**, capped at **\$90,000 per property** [1, pg. 4].
Eligible items include engineering, conduit, junction boxes, permits, and related EV infrastructure [1, pg. 6].
2. **EV-Charger Rebate:** up to **\$1,000 per Level-2 station (or \$2,000 per dual-port)**, capped at **\$10,000 per property** [1, pg. 4].
The **combined maximum** for both rebates is **\$100,000 per property** [1, pg. 4].

1.4 Technical requirements

A stall is **EV-enabled** if it has a **240 V termination point** (junction box or outlet) with enough capacity for Level-2 charging, or a new **120 V EV-dedicated outlet** [1, pg. 5].

If the service is not sufficient, the site must use an **EV Energy Management System (EVEMS)** to share capacity [1, pg. 5].

Chargers must be **Level-2, new (not leased), network-enabled, UL/CSA-certified**, and installed by a licensed electrician [1, pg. 5].

1.5 Funding disbursement

The City pays **30% of the rebate** after the engineering site design is submitted; it pays the remaining **70%** after proof of installation [1, pg. 4].

1.6 Eligible and ineligible costs

Eligible: engineering/design, conduit/wiring, meter enclosures, junction boxes, permits/inspections, and panel or service work tied to EV charging [1, pg. 6].

Ineligible: transformer upgrades, general building upgrades, and network subscription fees [1, pg. 6].

2. Proposed design for Hemisphere on the Bow

2.1 High-level design

The board's design allows **all stalls** to have a **dedicated Level-2 charger**. In Phase 1, the installer converts each stall's meter base to a **junction box** and runs conduit through the parkade [2, pg. 1]. When a resident is ready to install a charger, the electrician replaces the junction box with a **smart load-management charger** [2, pg. 1]. The smart charger comes in **one- or two-channel** versions, which allows power to be brought to all stalls. **Unit owners** will buy their own Level-2 EV charger and the **design-approved EVEMS**. A **programmable logic controller (PLC)** monitors chargers and adjusts output to keep total load within safe limits [2, pg. 1].

2.2 Network and data

Usage is measured by a power meter at each charger and reported for billing. This avoids Wi-Fi/cellular hardware in the garage and recurring network fees. It simplifies billing because consumption data is captured for each unit and added to the unit's existing utility bill [2, pg. 1]. There are **no software subscriptions or network charges** by design.

2.3 Load management and capacity

The existing service can support the plan **with smart load management** [2, pg. 1]. During peak times, the system reduces or rotates charging to stay within the building's main-service limit [2, pg. 1]. After upgrades, the building's service is **216 kW** with **24.8 kW spare** [2, pg. 1]. Each stall's **VEC load control** supports up to **60 A**, enabling Level-2 charging. The system can support **two-way charging** (vehicle-to-home during outages, or export to grid when applicable) if connected to a two-way charger, and subject to city approval.

2.4 Products and standards

The design uses **VEC load controls** because they allow dynamic set-point control. Controllers come in **single** and **dual-channel** versions. All chargers must be **UL/CSA certified**. Where possible, choose chargers that support **bi-directional** operation. A typical Level-2 charger can bring a BEV from empty to **~80% in 4–10 hours** (actual time depends on building load and the number of EVs charging simultaneously).

2.5 Implementation phases and costs

Phase 1 – EV-ready infrastructure. Install junction boxes, conduit, and load-management controllers in all stalls. The road map estimates **~\$55,000** for Phase 1 (engineering, design, inspections, ENMAX fees) [2, pg. 1]. The vendor estimate lists **\$4,240** for design/approvals and **\$23,730** for core infrastructure [3, pg. 1], plus **\$995 per stall** for load controllers (Phase 1b) [3, pg. 1].

Phase 2 – Charger installation. When residents are ready, the electrician wires and mounts the personal charger and replaces the junction box. The vendor estimates **\$1,850–2,850 per stall plus charger** [3, pg. 1]. The road map shows **\$1,400–3,900 per stall plus charger** [2, pg. 1]. If multiple stalls are done together, extra permits are **not** needed beyond the consolidated set [3, pg. 1].

Commercial terms. **\$6,000** deposit at acceptance; GST extra; **net-30** payment terms [3, pg. 1]. No network/EVEMS management fees.

2.6 Funding plan and repayment

The board may borrow up to **15% of annual revenue** without a special resolution. Phase 1 is within that limit. Rebates reduce the net cost. The corporation also has a **strong operating surplus**. Owners may offer **bridge financing**. When a future owner installs a charger, they pay a **one-time access fee** to repay the corporation for core infrastructure. There are **no** ongoing software or network fees to manage.

3. Bylaw considerations

3.1 Requirement for approval

Owners **may not** charge an EV in the underground parkade without **written board approval** [4, pg. 1]. Any changes to structural, mechanical, or **common electrical** systems require **written**

approval [4, pg. 1]. The board can require plans, engineer reviews, permits, insurance certificates, and deposits before approving work [4, pg. 1].

3.2 Board's approach

The board **will not** amend the bylaws. Each installation still needs **board approval**. This ensures compatibility with the system design and that the owner agrees to pay the **access fee** to recover infrastructure costs. City electrical **permits** and **inspections** are required for each EVEMS and charger. The **installer** pays those permit and inspection costs. Insurance falls under the building's policy.

4. Implementation and next steps

1. **Board resolution.** Approve Phase 1 infrastructure using rebates, borrowing within the 15% limit, and/or operating surplus.
2. **General resolution & site design.** If approved, engage a licensed engineer to produce the **engineering site design** and load calculations, and submit before **18 Nov 2025** [1, pg. 2–4].
3. **ENMAX assessment.** Start the ENMAX load-assessment process.
4. **Resident opt-in.** After approval, solicit owner interest for Phase 2. This sets the count of Phase 1b controllers.
5. **Communications.** Share costs, access-fee policy, timelines, billing integration, and responsibilities.

Conclusion

ChargeYYC Phase 2 presents a strong opportunity to develop a comprehensive EV infrastructure with public funding support. Smart load management lets us offer Level-2 charging at every stall while staying within service limits. The financing plan (rebates, borrowing within the 15% cap, surplus, and access-fee recovery) keeps costs fair. Requiring board approval for each install maintains safety and design integrity. Hitting the application timeline and clear owner communication will drive success.

Appendix

References

- [1] **City of Calgary.** *ChargeYYC Phase-2 Application Guide* (PDF).
- [2] **Project CY2857.** *ChargeYYC – Road Map* (Google Sheets PDF export).
- [3] **Vendor Quote.** *Parkdale EV Infrastructure Estimate* (PDF).
- [4] **Hemisphere on the Bow.** *Bylaws* (PDF).

Glossary of terms

- **EV (Electric Vehicle).** A vehicle that uses electricity stored in a battery to power an electric motor.
- **Level-2 charger.** 208/240 V charger, typically ~7–19 kW; ~4–10 h for ~80% charge.
- **EV-enabled stall.** A stall with a 240 V termination (junction box/outlet) or a new 120 V EV-dedicated outlet.
- **EVEMS (EV Energy Management System).** Equipment that shares/limits power among chargers so the building does not overload.
- **VEC load control.** A dynamic controller that adjusts charging current; available in single- and dual-channel versions.
- **PLC (Programmable Logic Controller).** The controller that monitors chargers and enforces building load limits
- **Bi-directional charging.** An EV can power home loads during an outage or export to grid when supported.
- **UL/CSA certification.** Safety approval needed for sale/installation in Canada.
- **Access fee.** One-time fee owners pay when they install EVEMS/charger later, to repay core infrastructure.
- **ChargeYYC.** City of Calgary rebates for EV-ready infrastructure and chargers in multi-unit buildings.